

Appln No. 10/663,637

Reply to Office Action of October 17, 2005

AMENDMENTS TO THE CLAIMS

1. (withdrawn) The method of forming a composite belt structure for a tire, the method comprising the steps of:

applying a multicord reinforced strip having a strip width S_w onto a rotating crowned building drum, the strips being wound in a zigzag configuration to form at least two zigzag layers wherein the crowned drum has the non-overlapping portions of the strips placed in a central portion and extending in alternation to a pair of shoulder portions having the portions of the strips overlapping, the central portion having a maximum diameter D_o and the shoulder portions have a minimum diameter D_i , the adjacent strips being placed apart from 0 to 2 mm in the central portion and the strips are increasingly overlapping in each shoulder portion as the strips extend from the central portion toward lateral ends of the belt structure to form belt layers of a composite belt structure having the cords per inch in the shoulder portion as measured axially inwardly from the axially inner edge of the strip adjacent the lateral ends of the narrowest radially outer belt layer radially inwardly greater than the cords per inch in the central portion as measured centered on the centerplane of the belt structure.

2. (withdrawn) The method of forming a composite belt structure of claim 1 wherein the strips in the non-overlapping center region occupy at least 50% of the belt width W , W being measured at the lateral extremes or edges of the widest belt layer, and each overlapping shoulder portion occupies 25% or less of the belt width.

3. (withdrawn) The method of forming a composite belt structure of claim 2 wherein the overlapping of strips in each shoulder portion ranges from greater than 0% adjacent the central portion up to 100% at the outermost lateral edge of the belt.

4. (withdrawn) The method of forming a composite belt structure of claim 1 having both zigzag and spirally wound layers and wherein only the strips of the zigzag layers overlap as the strip is wound away from the center region toward the lateral edge.

5. (withdrawn) The method of forming a composite belt structure of claim 4

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wherein the overlap of each adjacent zigzag strip adjacent to a turning point at the lateral edge overlaps at a distance of 50% or more of the strip width S_w .

6. (withdrawn) The method of forming a composite belt structure of claim 1 wherein the step of applying the strip to the crowned building drum includes passing the strip from a linear moving strip the linear movement being parallel to and spaced a fixed distance of the axis of rotation of the crowned building drum.

7. (presently amended) A pneumatic tire having a carcass and a belt reinforcing structure, the belt reinforcing structure comprising:

a composite zigzag belt structure of cord-reinforced layers including at least two radially outer zigzag belt layers, each outer zigzag belt layer having cords inclined at 5 to 30 degrees relative to the centerplane of the tire extending in alternation to turnaround points at each lateral edge, wherein in the crown portion of the tire the zigzag belt structure has two layers of cords, and in the shoulder portion of the tire there are four layers of cords

and at least one spirally wound belt layer having cords wound spirally at an inclination of 5 degrees or less relative to the tire's centerplane, ~~and located radially inward of the at least two radially outer zigzag belt layers, and the distance between the lateral edges of the widest belt layer define the belt width W, and~~
~~wherein each zigzag belt layer is formed by a continuous strip of two or up to 20 cords, the strips having a strip width S_w and edges spaced apart a distance of 0 to 2 mm in a central portion occupying at least 50% of the belt width W and in each shoulder portion occupying 25% or less of W the edges of the adjacent strips within a layer are overlapping to form a belt having the cords per inch greater in the shoulder portions than the central portion.~~

8. (presently amended) The pneumatic tire of claim 7, the belt reinforcing structure further comprising: at least one spiral wound belt layer; ~~and at least two radially inner zigzag layers, the radially inner zigzag belt layers being positioned between the carcass and the at least one spiral wound belt~~

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~~layer, each radially inner zigzag belt layer having cords wound in alternation at an inclination of 5 degrees to 30 degrees relative to the centerplane of the tire to turnaround points at each lateral edge of the belt layer.~~

9-18 canceled

This listing of claims will replace all prior versions and listings of claims in the application.